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DR 1090  
NOVEMBER 1979

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METEOROLOGICAL DATA REPORT

12822A LANCE  
Missile No. 4883  
Round No. 338-NCL  
08 November 1979

DTIC  
ELECTE  
APR 2 1980  
S D C

by

White Sands Meteorological Team

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 12822A Lance, Missile Number 4883, Round Number 338-NCL are presented in tabular form.		

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## INTRODUCTION

12822A Lance, Missile Number 4883, Round Number 338 NCL, was launched from Red Rio, White Sands Missile Range (WSMR), New Mexico, at 0730 MST, 08 Nov 79. The scheduled launch time was 0800 MST.

## DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

### 1. Observations

#### a. Surface

(1) Standard surface observations to include pressure, temperature ( $^{\circ}\text{C}$ ), relative humidity, dew point ( $^{\circ}\text{C}$ ), density ( $\text{gm}/\text{m}^3$ ), wind direction and speed, and cloud cover were made at the Red Rio Met Site at T-0 minutes.

(2) Monitor of wind speed and direction from one anemometer was provided in the launch control room.

#### b. Upper Air

(1) Low level wind data were obtained from RPTS T-9 pibal observation at:

## SITE AND ALTITUDE

No Pibal data provided

(2) Air structure data (rawinsonde) were collected at the following Met Sites. Data were collected from surface to as high as possible feet in 500-foot increments.

## SITE AND TIME

Red Rio 0720 MST  
Jallen 0800 MST

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist.	Avail and/or special
A	CP

TABLE 1. Surface Observations taken at 0720 MST,  
08 November 1979, at Red Rio, 12822A  
Lance, Missile Number 4883, Round Number  
338 NCL.

ELEVATION	6331.9	FT/MSL
PRESSURE	800.9	MBS
TEMPERATURE	8.9	°C
RELATIVE HUMIDITY	83	%
DEW POINT	6.2	°C
DENSITY	984	GM/M <sup>3</sup>
WIND SPEED	14	KTS
WIND DIRECTION	220	DEGREES
CLOUD COVER	10	SC

STATION ALTITUDE 6331.00 FEET MSL  
 8 NOV. 79 0720 HRS MSF  
 ASCENSION NO. 2

SIGNIFICANT LEVEL DATA  
 31203000Z  
 REG KIC

GEODETTIC COORDINATES  
 33.77850 LAT DEG  
 106.24993 LON. DEG

TABLE 2

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MFL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
507.9	6331.9	8.9	9.2	63.0
756.0	7523.1	5.0	5.0	92.0
700.0	9843.8	.5	.4	99.0
553.6	11745.5	-1.7	-1.0	99.0
545.0	12094.3	-3.0	-3.7	99.0
559.4	13307.5	-8.5	-6.0	99.0
561.4	15507.9	-9.7	-9.0	99.0
537.4	17102.5	-12.3	-15.0	93.0
522.0	17463.7	-14.4	-15.0	89.0
508.0	18505.0	-10.0	-12.0	65.0
463.2	20331.9	-20.1	-22.0	65.0
431.0	24195.5	-24.0	-20.9	77.0
412.4	25207.3	-26.1	-25.0	71.0
407.0	24109.1	-28.0	-30.5	78.0
387.4	24763.4	-29.3	-37.0	57.0
361.4	25129.3	-29.8	-40.5	54.0
353.6	26247.0	-31.5	-44.5	26.0

STATION ALTITUDE 6331.86 FEET MSL  
 3 NOV. 79 0720 HRS MST  
 ASCENSION NO. 2

UPPER AIR DATA  
 31203000Z  
 RCU RUC

GEODETIC COORDINATES  
 33.77650 LAT 126  
 106.24993 LO. DEG

TABLE 3

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> NOTES	SPEED OF SOUND M/S	DIRECTION DEGREES (T)	WIND DATA	INDEX OF REFRACTION
6331.9	800.9	4.9	83.0	984.6	655.7	220.0	14.0	1.000265
5539.0	795.9	6.5	84.0	986.2	655.2	222.4	14.9	1.000263
7039.0	781.4	7.2	86.9	985.7	653.7	228.0	17.9	1.000258
7509.0	767.1	9.0	89.7	985.4	652.2	231.9	21.0	1.000253
8029.0	753.0	4.3	92.4	980.1	650.3	234.9	24.1	1.000248
9539.0	739.0	3.7	94.1	920.4	649.4	237.1	27.3	1.000243
9809.0	725.2	2.6	95.8	912.9	648.1	239.0	30.2	1.000239
9900.0	711.3	1.5	97.5	899.7	646.7	243.4	32.5	1.000234
10.03.0	698.5	4	99.0	889.4	645.5	246.7	35.0	1.000229
10.25.0	685.4	-2	99.0	871.8	644.7	248.0	35.0	1.000225
11.03.0	672.5	-8	99.0	857.5	644.0	250.0	35.7	1.000220
11.50.0	659.8	-1.4	99.0	845.2	643.2	251.7	37.2	1.000216
12.00.0	647.3	-3.1	99.0	832.7	641.1	251.2	39.2	1.000211
12.39.0	634.9	-4.2	99.0	820.3	639.7	250.0	38.7	1.000206
13.00.0	622.7	-5.0	99.0	809.9	638.8	249.0	36.7	1.000202
13.50.0	610.8	-5.7	93.0	795.7	637.6	249.7	36.5	1.000198
14.00.0	599.0	-6.5	93.0	780.0	636.9	249.0	36.7	1.000194
14.30.0	587.5	-7.3	99.0	760.1	636.0	250.1	38.0	1.000190
15.00.0	575.2	-8.0	99.0	755.5	635.0	250.5	39.3	1.000186
15.50.0	565.1	-9.1	99.0	744.2	633.0	249.3	42.7	1.000182
16.00.0	554.1	-10.4	97.0	733.4	632.0	248.4	46.2	1.000178
16.50.0	543.2	-11.9	95.5	722.2	630.6	246.9	45.6	1.000174
17.00.0	532.6	-12.7	93.4	711.2	629.2	245.5	46.6	1.000170
17.50.0	522.0	-14.3	83.9	701.5	627.2	245.3	43.9	1.000166
18.00.0	511.6	-12.3	97.1	682.2	629.7	245.7	41.5	1.000164
18.50.0	501.7	-10.5	85.3	665.8	632.1	243.0	44.0	1.000161
19.00.0	491.3	-12.3	85.0	655.0	629.7	250.5	46.6	1.000157
19.50.0	482.0	-15.1	85.0	649.9	626.2	253.1	49.2	1.000154
20.00.0	472.4	-16.0	85.0	644.2	622.7	254.9	51.0	1.000151
20.50.0	462.9	-20.4	84.5	637.4	619.7	256.5	52.4	1.000146
21.00.0	453.5	-21.4	82.3	627.1	610.3	256.0	53.8	1.000145
21.30.0	444.2	-22.5	80.1	617.0	617.0	255.1	55.1	1.000142
22.00.0	435.1	-23.6	77.9	607.0	615.0	253.7	56.6	1.000140
22.50.0	426.2	-27.7	75.3	595.9	614.4	253.2	57.4	1.000137
23.00.0	417.5	-29.0	72.6	586.9	613.2	253.5	57.7	1.000134
23.50.0	408.7	-30.0	73.1	577.3	611.6	253.5	57.1	1.000132
24.00.0	400.2	-30.6	77.9	566.3	610.1	254.1	55.1	1.000130
24.30.0	391.8	-35.5	57.3	555.4	609.0			1.000126
25.00.0	383.5	-39.0	35.6	540.5	600.0			1.000123
25.50.0	375.4	-41.8	31.5	530.6	607.1			1.000121

STATION ALTITUDE 6001.00 FEET MSL  
 8 NOV. 79 0720 HRS MS  
 ASCENSION NO. 2

UPPER AIR DATA  
 3120Z000Z  
 000000

TABLE 3 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREE CENTIGRADE	REL. HUM. PERCENT	DENSITY KG/CUBIC METER	SPEED OF SOUND M/SEC	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
6000.0	307.5	-31.1	-43.6	27.0	520.8	000.1		1.000119

STATION ALTITUDE 6331.60 FEET MSL  
 3 47. 79  
 4501510. 0.0. 2

GEODETIC COORDINATES  
 31.77850 LAT DEG  
 106.24993 LONG DEG

TABLE 4

PRESSURE GEOPHYSICAL	TEMPERATURE	REL. HUM.	WIND DIRECTION	WIND SPEED
	AXIAL DEGREE	PERCENT	DEGREES (N)	KNOTS
BARIBARS	FEET			
600.0	6350.	6.8	0.1	14.1
700.0	8101.	4.5	3.0	24.8
800.0	9903.	.5	.4	34.7
900.0	11802.	-2.5	-2.0	38.8
1000.0	13751.	-5.4	-6.0	30.7
1100.0	15697.	-10.0	-11.0	40.5
1200.0	17562.	-18.0	-12.0	44.4
1300.0	19400.	-21.8	-23.1	54.2
1400.0	21272.	-28.0	-30.0	55.1

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

SIGNIFICANT LEVEL DATA  
3120.0145  
JULIEN

TABLE 5

STATION ALTITUDE 4051.00 FEET MSL  
R 100.77  
R 500.115 451  
R 500.510.00. 140

PRESSURE	GEODETIC ALTITUDE	TEMPERATURE	REL. HUM.
MILLIBARS	FEET	AIR	PERCENT
		DEGREES	
		CENTIGRADE	
870.6	4051.0	9.4	76.0
826.0	4293.4	11.8	77.0
790.0	4702.3	11.2	73.0
625.2	5515.1	10.9	67.0
721.0	6145.1	3.3	70.0
712.4	6437.2	2.9	70.0
700.0	6635.2	.7	71.0
667.0	11199.3	-1.3	66.0
641.0	12333.7	-3.9	74.0
624.0	12931.7	-5.1	99.0
622.0	13039.4	-5.9	99.0
590.2	14301.2	-6.6	99.0
590.0	14104.2	-7.7	99.0
582.4	14728.1	-8.0	79.0
571.8	15194.8	-10.3	58.0
550.0	16175.0	-12.7	49.0
524.0	17368.8	-14.1	44.0
517.0	17722.0	-14.0	34.0
500.0	18555.1	-16.8	72.0
493.0	18601.3	-17.1	60.0
478.0	19651.2	-18.4	99.0
465.0	20400.5	-19.9	66.0
429.4	22783.3	-23.2	51.0
400.0	23070.5	-25.3	17.0
393.0	24398.0	-25.0	14.0
353.4	26704.5	-31.0	16.0
340.0	27763.5	-33.0	15.0
322.0	29058.1	-34.5	
300.0	30670.8	-39.1	
280.0	33445.7	-46.1	
250.0	34701.3	-47.5	
228.2	36967.2	-52.1	
210.0	37400.3	-53.0	
200.0	39442.8	-58.4	
174.2	42274.2	-63.1	
173.0	42415.1	-60.6	
170.0	42774.2	-60.3	
150.0	45110.0	-66.2	
130.4	46705.7	-68.6	
125.2	47790.0	-67.3	

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

SIGNIFICANT LEVEL DATA  
3120030145  
JALLEN

TABLE 5 (cont)

STATION ALTITUDE 4051.00 FEET MSL  
8 JULY 79  
0300 HRS MST  
ASCELSIO 10. 145

PRESSURE	GEOMETRIC ALTITUDE MILLIBARS MSL FEET	TEMPERATURE		REL. HUM. PERCENT
		AIR DEGREES	DEWPOINT CENTIGRADE	
118.4	50014.5	-64.3		
111.6	51163.2	-65.6		
101.8	53043.2	-66.5		
100.0	53409.5	-65.2		
89.4	55367.1	-62.5		
35.4	56305.7	-59.7		
55.6	57047.5	-59.0		
70.0	58565.0	-63.5		
50.0	67595.0	-58.2		
46.6	69060.6	-58.0		

GEODETIC COORDINATES  
33.16712 LAT LEG  
106.49511 LONG LEG

UPPER AIR DATA  
31200JUL43  
JALLET

STATION ALTITUDE 4051.00 FEET MSL  
8 NOV. 79 3300 HRS MST  
ASCENDING NO. 145

TABLE 6

GEODETIC ALTITUDE MSL FELT	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
4051.0	870.4	9.4	96.0	1067.9	356.5	170.0	2.9	1.000292
4200.0	855.7	10.4	97.7	1058.2	357.7	193.0	3.8	1.000283
4400.0	839.4	11.3	76.9	1045.8	359.2	210.5	5.5	1.000263
4600.0	823.2	11.4	74.3	1039.9	358.6	218.0	7.5	1.000279
4800.0	807.0	11.2	72.3	1033.3	358.3	223.0	9.6	1.000275
5000.0	790.8	11.1	70.8	1025.2	358.2	228.5	11.7	1.000273
5200.0	774.7	11.0	69.3	1019.1	358.1	223.0	13.8	1.000270
5400.0	758.7	10.9	67.8	1012.0	358.0	230.5	16.0	1.000267
5600.0	742.5	10.7	67.2	1003.5	357.7	231.5	18.1	1.000265
5800.0	726.6	10.3	67.7	999.6	357.2	232.5	20.3	1.000263
6000.0	710.5	9.9	68.2	993.6	356.7	233.5	22.1	1.000261
6200.0	694.0	9.5	68.7	988.0	356.2	235.2	23.0	1.000259
6400.0	678.6	9.0	69.2	982.2	355.7	230.7	23.9	1.000257
6600.0	662.8	8.6	69.7	976.5	355.2	238.1	24.9	1.000255
6800.0	646.9	8.2	70.2	970.8	354.7	239.4	25.9	1.000253
7000.0	631.1	7.8	70.7	965.1	354.2	247.9	26.9	1.000251
7200.0	615.4	7.4	71.2	959.5	353.7	242.4	28.2	1.000249
7400.0	600.0	7.0	71.7	953.9	353.2	243.9	29.5	1.000247
7600.0	584.4	6.5	72.2	948.3	352.7	245.5	30.7	1.000245
7800.0	568.8	6.1	72.7	942.6	352.1	248.0	32.0	1.000243
8000.0	553.3	5.7	73.2	937.0	351.6	247.9	33.1	1.000242
8200.0	537.7	5.3	73.7	931.8	351.1	249.5	33.5	1.000240
8400.0	522.2	4.9	74.2	926.4	350.6	250.7	34.0	1.000238
8600.0	506.7	4.4	74.6	921.0	350.1	252.1	34.6	1.000236
8800.0	491.1	4.0	75.1	915.7	349.6	253.4	35.1	1.000234
9000.0	475.5	3.6	75.6	910.4	349.1	254.2	35.3	1.000232
9200.0	460.0	3.2	76.0	904.9	348.6	254.8	35.5	1.000231
9400.0	444.4	3.0	76.0	899.9	348.4	255.4	35.6	1.000229
9600.0	428.9	2.4	77.2	894.3	347.8	256.0	35.7	1.000227
9800.0	413.4	1.4	77.4	889.0	347.5	256.5	36.0	1.000225
10000.0	397.9	.6	81.2	883.7	347.5	256.6	36.9	1.000224
10200.0	382.5	.2	82.0	878.1	347.0	256.5	37.6	1.000222
10400.0	367.0	-.2	82.8	872.9	346.5	256.9	38.7	1.000221
10600.0	351.5	-.6	83.0	867.6	346.0	257.0	39.6	1.000219
10800.0	336.0	-1.0	84.4	862.3	345.5	256.7	40.9	1.000217
11000.0	320.5	-1.4	85.2	856.9	345.1	256.4	42.2	1.000216
11200.0	305.0	-1.8	86.0	851.8	344.6	256.1	43.5	1.000214
11400.0	289.5	-2.2	86.7	846.7	344.1	255.8	44.8	1.000212
11600.0	274.0	-2.6	87.4	841.6	343.6	255.0	45.5	1.000209
11800.0	258.5	-3.0	88.1	836.5	343.1	254.1	46.2	1.000207

GEODETIC COORDINATES  
53.13712 LAT DEG  
106.49511 LON DEG

UPPER AIR DATA  
3120000145  
JALLEN

TABLE 6 (cont)

STATION ALTITUDE 4051.00 FEET MSL  
8.400.19  
ASCENSION NO. 145

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GRAMS PER CUBIC METER	SPEED OF SOUND M/SEC	DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
12400.0	647.4	-3.4	76.7	834.4	640.5	253.2	46.9	1.000205
12400.0	642.5	-3.3	74.4	829.4	640.0	252.4	47.6	1.000203
12400.0	637.5	-4.2	79.9	824.0	639.6	251.4	46.9	1.000202
12400.0	632.6	-4.5	87.1	818.0	639.2	250.3	45.6	1.000202
12400.0	627.8	-4.9	94.3	813.2	638.9	249.1	44.3	1.000202
12400.0	622.9	-5.6	99.0	809.2	638.0	247.9	43.0	1.000201
12400.0	618.1	-6.1	99.0	804.2	637.5	246.7	42.1	1.000200
12400.0	613.4	-6.2	99.0	799.4	637.3	245.8	42.0	1.000199
12400.0	608.6	-6.3	99.0	794.7	637.1	244.9	42.0	1.000197
12400.0	603.9	-6.5	99.0	787.0	637.0	244.0	42.0	1.000195
12400.0	599.2	-6.6	99.0	781.3	636.8	243.1	42.0	1.000194
12400.0	594.5	-7.9	95.8	779.2	635.2	242.5	42.6	1.000191
12400.0	589.9	-8.3	89.0	774.4	634.6	242.0	43.6	1.000184
12400.0	585.3	-8.7	82.3	769.6	634.1	241.5	44.7	1.000186
12400.0	580.8	-9.1	74.9	765.1	633.5	241.0	45.7	1.000183
12400.0	576.2	-9.7	66.3	761.0	632.7	240.7	46.7	1.000180
12400.0	571.7	-10.3	58.0	756.9	631.9	240.9	47.1	1.000177
12400.0	567.2	-10.8	56.1	752.4	631.3	241.0	47.5	1.000176
12400.0	562.7	-11.3	54.3	747.9	630.7	241.1	47.9	1.000174
12400.0	558.2	-11.8	52.4	743.4	630.1	241.5	48.3	1.000173
12400.0	553.5	-12.3	50.6	739.0	629.5	241.2	49.2	1.000171
12400.0	549.5	-12.7	48.5	734.4	628.9	242.5	50.3	1.000170
12400.0	545.1	-13.0	44.2	729.3	628.0	242.5	51.3	1.000168
12400.0	540.7	-13.2	39.9	724.2	626.3	243.5	52.3	1.000166
12400.0	536.4	-13.4	35.7	719.2	626.0	243.7	52.7	1.000165
12400.0	532.2	-13.7	31.4	714.2	627.7	244.0	52.3	1.000163
12400.0	527.9	-13.9	27.2	709.2	627.4	244.4	51.9	1.000161
12400.0	523.7	-14.1	25.0	704.0	627.2	244.7	51.5	1.000160
12400.0	519.5	-14.0	30.7	695.2	627.5	245.2	51.2	1.000159
12400.0	515.4	-14.3	37.5	693.1	627.0	246.0	50.8	1.000159
12400.0	511.3	-14.9	46.7	689.3	626.2	246.0	50.6	1.000159
12400.0	507.2	-15.6	55.8	685.5	625.4	249.4	50.3	1.000154
12400.0	503.1	-16.3	65.0	681.7	624.6	250.0	50.1	1.000154
12400.0	499.1	-16.8	74.1	677.7	624.0	252.1	50.7	1.000153
12400.0	495.0	-17.0	83.2	672.7	623.8	253.4	51.7	1.000152
12400.0	491.0	-17.3	88.3	668.0	623.4	254.5	52.6	1.000152
12400.0	487.1	-17.7	91.7	663.4	623.0	255.8	53.7	1.000150
12400.0	483.1	-18.3	94.1	658.9	622.0	258.5	54.8	1.000155
12400.0	479.2	-18.5	98.5	654.4	622.2	259.3	56.6	1.000154
12400.0	475.3	-18.7	96.1	650.1	621.7	259.2	58.4	1.000153

STATION ALTITUDE 4951.00 FEET MSL  
 R. NOV. 79 3000 HRS MSL  
 ASC. S.O. NO. 145

UPPER AIR DATA  
 3120030145  
 JALLEN

GEODETIC COORDINATES  
 33.10712 LAT DEG  
 106.49511 LON DEG

TABLE 6 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
20100.0	471.4	-19.1	72.8	045.9	621.2	256.0	60.2	1.000151
20200.0	467.0	-19.5	69.4	041.6	620.7	255.9	62.0	1.000150
20300.0	463.6	-19.9	66.0	037.4	620.2	255.4	64.0	1.000148
20400.0	460.0	-20.2	61.4	032.9	619.9	254.7	66.1	1.000147
20500.0	456.2	-20.5	75.0	028.5	619.5	254.0	68.3	1.000145
20600.0	452.5	-20.7	72.2	024.0	619.2	253.4	70.4	1.000144
20700.0	448.8	-21.0	67.5	019.6	618.8	252.6	72.6	1.000143
20800.0	445.1	-21.3	62.9	015.2	618.5	252.3	74.5	1.000141
20900.0	441.4	-21.6	58.3	010.9	618.1	251.9	76.1	1.000140
21000.0	437.8	-21.8	53.7	006.6	617.7	251.0	77.7	1.000139
21100.0	434.2	-22.1	49.1	002.3	617.4	251.2	79.3	1.000137
21200.0	430.6	-22.4	44.5	593.0	617.0	250.9	80.9	1.000136
21300.0	427.1	-22.7	39.8	593.8	616.7	251.0	81.9	1.000135
21400.0	423.5	-22.9	35.2	589.6	616.3	251.2	82.6	1.000133
21500.0	420.1	-23.2	30.8	585.4	616.0	251.4	83.3	1.000132
21600.0	416.6	-23.6	28.5	581.4	615.5	251.0	84.0	1.000131
21700.0	413.2	-23.9	25.1	577.4	615.1	252.0	84.4	1.000130
21800.0	409.7	-24.3	23.0	573.4	614.6	252.8	84.3	1.000129
21900.0	406.3	-24.6	21.4	569.5	614.2	253.5	84.2	1.000128
22000.0	403.0	-25.0	19.1	565.6	613.8	254.2	84.2	1.000127
22100.0	399.6	-25.3	16.3	561.6	613.3	254.9	84.1	1.000126
22200.0	396.3	-25.5	15.4	557.3	613.2	255.9	84.5	1.000125
22300.0	393.0	-25.8	14.0	553.0	613.0	256.6	84.9	1.000124
22400.0	389.6	-26.0	14.2	549.2	612.4	257.7	85.3	1.000123
22500.0	386.4	-26.3	14.5	545.0	611.9	258.7	85.8	1.000122
22600.0	383.1	-26.9	14.3	541.9	611.4	259.0	87.7	1.000121
22700.0	379.9	-27.3	14.6	538.3	610.8	259.5	90.0	1.000120
22800.0	376.7	-27.3	14.8	534.7	610.3	261.3	92.4	1.000120
22900.0	373.5	-28.2	15.0	531.1	609.8	262.2	94.7	1.000119
23000.0	370.3	-28.6	15.1	527.5	609.2	262.9	97.3	1.000118
23100.0	367.2	-29.1	15.3	524.0	608.7	263.5	100.0	1.000117
23200.0	364.1	-29.3	15.4	520.5	608.2	264.1	102.6	1.000116
23300.0	361.0	-29.9	15.6	517.0	607.6	264.7	105.3	1.000116
23400.0	358.0	-30.3	15.8	513.6	607.1	265.3	108.1	1.000115
23500.0	355.0	-30.8	15.9	510.2	606.5	265.6	110.0	1.000114
23600.0	352.0	-31.2	15.9	506.8	606.0	266.2	111.5	1.000113
23700.0	349.9	-31.7	15.6	503.4	605.4	266.7	113.0	1.000113
23800.0	345.9	-32.2	15.4	500.1	604.8	267.1	114.6	1.000112
23900.0	343.0	-32.6	15.2	496.6	604.2	267.0	116.1	1.000111
24000.0	340.0	-33.1	14.4**	493.4	603.7	267.9	117.3	1.000110

STATION ALTITUDE 9951.00 FEET MSL  
 9 MAY 79 0800 HRS NSI  
 ASCENDING NO. 145

UPPER AIR WAT 1  
 3120030145  
 JALLEN

GEODETIC COORDINATES  
 33.10712 LAT DEG  
 106.49511 LONG DEG

TABLE 6 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CELSIUS	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> WATER	SPEED OF SOUND M/SEC	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
23000.0	337.1	-33.3	12.1**	489.0	603.4	208.0	118.1	1.000109
23200.0	334.2	-33.5	9.8**	483.0	603.1	208.2	118.9	1.000108
23400.0	331.5	-33.7	7.5**	482.1	602.8	208.4	119.7	1.000108
23600.0	328.8	-34.0	5.2**	473.4	602.5	208.6	120.5	1.000107
23800.0	325.6	-34.2	3.0**	474.7	602.2	208.8	121.8	1.000106
24000.0	322.4	-34.4	.7**	471.1	601.9	208.9	123.2	1.000105
24200.0	320.0	-34.9		467.9	601.5	208.4	124.6	1.000104
24400.0	317.2	-35.5		464.9	600.6	208.3	126.1	1.000104
24600.0	314.4	-36.0		462.0	599.9	208.2	127.6	1.000103
24800.0	311.7	-36.0		459.0	599.2	208.0	129.7	1.000102
25000.0	309.0	-37.2		456.1	598.4	207.9	131.7	1.000102
25200.0	306.3	-37.5		453.2	597.7	207.7	133.7	1.000101
25400.0	303.6	-38.3		450.4	597.0	207.6	135.6	1.000100
25600.0	300.9	-38.9		447.5	596.3	207.3	138.7	1.000100
25800.0	298.3	-39.4		444.6	595.6	207.1	141.9	1.000099
26000.0	295.6	-39.9		441.5	594.9	206.8	145.0	1.000098
26200.0	292.9	-40.4		438.5	594.3			1.000098
26400.0	290.3	-40.9		435.5	593.7			1.000097
26600.0	287.7	-41.4		432.6	593.0			1.000096
26800.0	285.1	-41.9		429.6	592.4			1.000096
27000.0	282.6	-42.5		426.7	591.7			1.000095
27200.0	280.1	-43.0		423.8	591.1			1.000094
27400.0	277.6	-43.5		421.0	590.4			1.000094
27600.0	275.1	-44.0		418.1	589.8			1.000093
27800.0	272.6	-44.5		415.3	589.1			1.000092
28000.0	270.2	-45.0		412.5	588.5			1.000092
28200.0	267.7	-45.5		409.7	587.8			1.000091
28400.0	265.3	-46.0		406.9	587.2			1.000091
28600.0	262.9	-46.5		403.7	586.8			1.000090
28800.0	260.5	-46.9		400.4	586.5			1.000089
29000.0	258.2	-47.4		397.2	586.2			1.000088
29200.0	255.6	-47.9		393.9	585.9			1.000088
29400.0	253.5	-48.4		390.7	585.6			1.000087
29600.0	251.2	-48.9		387.6	585.4			1.000086
29800.0	248.9	-49.4		384.6	585.1			1.000086
30000.0	246.6	-49.9		381.6	584.8			1.000085
30200.0	244.3	-50.4		379.1	584.5			1.000084
30400.0	242.0	-50.9		376.4	584.1			1.000084
30600.0	239.8	-51.4		373.7	583.7			1.000083
30800.0	237.6	-51.9		371.0	583.4			1.000083

\*\* AT LEAST ONE ASSUMED RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

UPPER AIR DATA  
3120030140  
JALLEN

STATION ALTITUDE 4051.00 FEET MSL  
A H.V. 79  
ASULSION: 1.0. 145

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LONG DEG

TABLE 6 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
3600.0	235.4	-50.5		363.3	511.3			1.000082
3620.0	235.2	-51.0		365.7	500.6			1.000081
3640.0	231.0	-51.5		363.1	500.0			1.000081
3660.0	228.9	-51.9		368.5	579.4			1.000080
3680.0	226.8	-52.3		357.6	578.9			1.000080
3700.0	224.7	-52.7		355.0	570.4			1.000079
3720.0	222.5	-53.1		352.3	577.9			1.000078
3740.0	220.5	-53.5		349.6	577.4			1.000078
3760.0	218.4	-53.8		345.9	576.9			1.000077
3780.0	216.3	-54.3		344.4	576.3			1.000077
3800.0	214.3	-54.8		341.9	575.0			1.000076
3820.0	212.2	-55.3		339.4	575.0			1.000075
3840.0	210.2	-55.8		337.0	574.3			1.000075
3860.0	208.2	-56.3		334.5	573.7			1.000075
3880.0	206.2	-56.8		332.1	573.0			1.000074
3900.0	204.3	-57.3		329.7	572.4			1.000073
3920.0	202.3	-57.8		327.3	571.7			1.000073
3940.0	200.4	-58.3		324.9	571.0			1.000072
3960.0	198.5	-58.7		322.4	570.6			1.000072
3980.0	196.5	-59.0		319.7	570.1			1.000071
4000.0	194.6	-59.3		317.1	569.7			1.000071
4020.0	192.7	-59.7		314.5	569.2			1.000070
4040.0	190.9	-60.0		311.9	568.6			1.000069
4060.0	189.0	-60.3		309.4	568.3			1.000069
4080.0	187.2	-60.7		306.9	567.9			1.000068
4100.0	185.4	-61.0		304.4	567.5			1.000068
4120.0	183.6	-61.3		301.9	567.0			1.000067
4140.0	181.8	-61.6		299.4	566.6			1.000067
4160.0	180.0	-62.0		297.0	566.1			1.000066
4180.0	178.3	-62.3		294.5	565.7			1.000066
4200.0	176.5	-62.6		292.2	565.2			1.000065
4220.0	174.8	-63.0		289.8	564.8			1.000065
4240.0	173.1	-63.4		287.4	564.4			1.000065
4260.0	171.4	-63.8		285.0	564.0			1.000065
4280.0	169.8	-64.2		282.6	563.6			1.000065
4300.0	168.1	-64.6		280.2	563.2			1.000065
4320.0	166.5	-65.0		277.8	562.8			1.000065
4340.0	164.9	-65.4		275.4	562.4			1.000065
4360.0	163.3	-65.8		273.0	562.0			1.000065
4380.0	161.7	-66.2		270.6	561.6			1.000065
4400.0	160.1	-66.6		268.2	561.2			1.000065
4420.0	158.5	-67.0		265.8	560.8			1.000065
4440.0	156.9	-67.4		263.4	560.4			1.000065
4460.0	155.3	-67.8		261.0	560.0			1.000065
4480.0	153.7	-68.2		258.6	559.6			1.000065
4500.0	152.1	-68.6		256.2	559.2			1.000065
4520.0	150.5	-69.0		253.8	558.8			1.000065
4540.0	148.9	-69.4		251.4	558.4			1.000065
4560.0	147.3	-69.8		249.0	558.0			1.000065
4580.0	145.7	-70.2		246.6	557.6			1.000065
4600.0	144.1	-70.6		244.2	557.2			1.000065
4620.0	142.5	-71.0		241.8	556.8			1.000065
4640.0	140.9	-71.4		239.4	556.4			1.000065
4660.0	139.3	-71.8		237.0	556.0			1.000065
4680.0	137.7	-72.2		234.6	555.6			1.000065
4700.0	136.1	-72.6		232.2	555.2			1.000065
4720.0	134.5	-73.0		229.8	554.8			1.000065
4740.0	132.9	-73.4		227.4	554.4			1.000065
4760.0	131.3	-73.8		225.0	554.0			1.000065
4780.0	129.7	-74.2		222.6	553.6			1.000065
4800.0	128.1	-74.6		220.2	553.2			1.000065
4820.0	126.5	-75.0		217.8	552.8			1.000065
4840.0	124.9	-75.4		215.4	552.4			1.000065
4860.0	123.3	-75.8		213.0	552.0			1.000065
4880.0	121.7	-76.2		210.6	551.6			1.000065
4900.0	120.1	-76.6		208.2	551.2			1.000065
4920.0	118.5	-77.0		205.8	550.8			1.000065
4940.0	116.9	-77.4		203.4	550.4			1.000065
4960.0	115.3	-77.8		201.0	550.0			1.000065
4980.0	113.7	-78.2		198.6	549.6			1.000065
5000.0	112.1	-78.6		196.2	549.2			1.000065

STATION ALTITUDE 4951.00 FEET MSL  
 8 NOV. 79  
 ASCENDING 110. 145

UPPER AIR DATA  
 3120030145  
 JALFET

GEODETIC COORDINATES  
 53.16712 LAT DEG  
 106.49511 LONG DEG

TABLE 6 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND M/SEC	DIRECTION DEGREES (T)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
4490.0	100.0	-63.2		265.5	594.6			1.000054
4420.0	100.5	-63.6		263.4	593.9			1.000059
4400.0	100.9	-64.1		261.4	593.3			1.000058
4400.0	100.4	-64.5		259.4	592.7			1.000058
4400.0	100.6	-65.0		257.5	592.0			1.000057
4400.0	102.9	-65.5		255.5	591.4			1.000057
4420.0	100.0	-65.9		253.6	590.3			1.000056
4400.0	149.3	-65.3		251.5	590.2			1.000056
4400.0	147.0	-66.7		249.4	589.6			1.000056
4420.0	140.4	-67.0		247.3	589.3			1.000055
4400.0	144.9	-67.3		245.2	588.9			1.000055
4420.0	143.4	-67.7		243.2	588.5			1.000054
4400.0	142.0	-68.0		241.1	588.0			1.000054
4400.0	140.6	-68.3		239.1	587.6			1.000053
4400.0	139.2	-68.6		237.0	587.2			1.000053
4400.0	137.8	-68.9		234.5	587.4			1.000052
4400.0	136.4	-68.3		232.0	587.5			1.000052
4400.0	135.0	-68.2		229.5	587.7			1.000051
4400.0	133.7	-68.1		227.1	587.9			1.000051
4400.0	132.3	-68.0		224.7	588.0			1.000050
4400.0	131.0	-67.3		222.3	588.2			1.000050
4400.0	129.7	-67.7		219.9	588.4			1.000049
4400.0	128.4	-67.6		217.0	588.5			1.000048
4400.0	127.1	-67.5		215.3	588.7			1.000048
4400.0	125.8	-67.4		213.0	588.9			1.000047
4400.0	124.5	-67.0		210.5	589.3			1.000047
4400.0	123.3	-66.5		207.9	590.1			1.000046
4400.0	122.1	-65.9		205.3	590.8			1.000046
4400.0	120.9	-65.4		202.7	591.5			1.000045
4400.0	119.7	-64.9		200.2	592.2			1.000045
4400.0	118.5	-64.3		197.7	593.0			1.000044
4400.0	117.3	-64.5		195.9	592.7			1.000044
4400.0	116.2	-64.7		194.1	592.4			1.000043
4400.0	115.0	-65.0		192.4	592.1			1.000043
4400.0	113.9	-65.2		190.7	591.6			1.000042
4400.0	112.7	-65.4		189.1	591.3			1.000042
4400.0	111.6	-65.6		187.4	591.2			1.000042
4400.0	110.5	-65.7		185.6	591.1			1.000041
4400.0	109.4	-65.8		183.8	591.0			1.000041
4400.0	108.3	-65.9		182.1	590.8			1.000041

GEODLTIC COORDINATES  
33.16712 LAT DEG  
106.49311 LOH DEG

UPPER AIR DATA  
312000Z145  
JALLEN

TABLE 6 (cont)

STATION: ALTITUDE 4951.00 FEET MSL  
8 JUL 79 0800 HRS MST  
ASOS, SMO, NO. 145

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	AIR TEMPERATURE DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
32100.0	107.2	-60.7		100.4	530.7			1.000040
32200.0	106.2	-60.1		170.6	500.0			1.000040
32300.0	105.1	-60.2		177.0	500.5			1.000039
32400.0	104.1	-60.3		175.0	500.3			1.000039
32500.0	103.0	-60.4		173.0	500.2			1.000039
32600.0	102.0	-60.5		172.0	500.1			1.000039
32700.0	101.0	-60.9		169.0	500.0			1.000038
32800.0	100.0	-60.2		167.5	501.8			1.000037
32900.0	99.0	-60.0		163.7	502.1			1.000037
33000.0	98.0	-60.7		163.9	502.4			1.000036
33100.0	97.1	-60.5		162.1	502.8			1.000036
33200.0	96.1	-60.2		160.3	503.1			1.000036
33300.0	95.2	-60.0		158.5	503.4			1.000035
33400.0	94.2	-60.8		150.0	503.7			1.000035
33500.0	93.3	-60.5		155.1	504.0			1.000035
33600.0	92.4	-60.3		153.4	504.4			1.000034
33700.0	91.5	-60.1		151.7	504.7			1.000034
33800.0	90.6	-62.8		150.0	505.0			1.000033
33900.0	89.7	-62.5		146.4	505.3			1.000033
34000.0	88.8	-62.0		140.0	500.1			1.000033
34100.0	88.0	-61.2		144.5	507.2			1.000032
34200.0	87.1	-60.4		142.6	506.3			1.000032
34300.0	86.3	-59.7		140.0	503.2			1.000031
34400.0	85.4	-59.5		139.3	503.5			1.000031
34500.0	84.5	-59.3		137.6	503.8			1.000031
34600.0	83.6	-59.0		130.3	570.0			1.000030
34700.0	82.7	-59.2		135.1	503.9			1.000030
34800.0	82.2	-59.4		133.9	503.5			1.000030
34900.0	81.4	-59.7		132.0	503.2			1.000030
35000.0	80.6	-59.9		131.7	503.9			1.000029
35100.0	79.8	-60.2		130.5	500.5			1.000029
35200.0	79.0	-60.4		129.4	500.2			1.000029
35300.0	78.3	-60.7		125.3	507.9			1.000029
35400.0	77.5	-60.9		127.2	507.5			1.000028
35500.0	76.7	-61.2		126.1	507.2			1.000028
35600.0	76.0	-61.4		125.0	500.9			1.000028
35700.0	75.3	-61.7		124.0	500.5			1.000028
35800.0	74.5	-61.9		122.9	500.2			1.000027
35900.0	73.8	-62.2		121.9	505.9			1.000027
36000.0	73.1	-62.4		120.0	505.0			1.000027

STATION ALTITUDE 4051.00 FEET MSL  
 8 NOV. 79 0800 HRS MSL  
 ASCENDING NO. 145

UPPER AIR DATA  
 3120030145  
 JALLIN

GEODETIC COORDINATES  
 33.10712 LAT DEG  
 106.49511 LON DEG

TABLE 6 (cont)

GEODETIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> WATER	SPEED OF SOUND M/S	WIND DIRECTION DEGREES (T)	WIND SPEED KNOTS	INDEX OF REFRACTION
001.00.0	72.4	-62.7		119.8	505.2			1.000027
002.00.0	71.7	-62.9		118.8	504.9			1.000026
003.00.0	71.0	-63.1		117.7	504.6			1.000026
004.00.0	70.3	-63.4		116.7	504.2			1.000026
005.00.0	69.6	-63.4		115.6	504.2			1.000026
006.00.0	68.9	-63.3		114.4	504.4			1.000025
007.00.0	68.3	-63.1		113.2	504.0			1.000025
008.00.0	67.6	-63.0		112.0	504.8			1.000025
009.00.0	66.9	-62.8		110.9	505.0			1.000024
010.00.0	66.3	-62.6		109.7	505.2			1.000024
011.00.0	65.7	-62.5		108.6	505.4			1.000024
012.00.0	65.0	-62.3		107.4	505.6			1.000024
013.00.0	64.4	-62.2		106.3	505.9			1.000023
014.00.0	63.8	-62.0		105.2	506.1			1.000023
015.00.0	63.1	-61.9		104.1	506.3			1.000023
016.00.0	62.5	-61.7		103.0	506.5			1.000023
017.00.0	61.9	-61.6		102.0	506.7			1.000023
018.00.0	61.3	-61.4		100.9	506.9			1.000022
019.00.0	60.7	-61.3		99.9	507.1			1.000022
020.00.0	60.1	-61.1		98.8	507.3			1.000022
021.00.0	59.6	-61.0		97.6	507.5			1.000022
022.00.0	59.0	-60.8		96.6	507.7			1.000022
023.00.0	58.4	-60.7		95.6	507.9			1.000021
024.00.0	57.9	-60.5		94.6	508.1			1.000021
025.00.0	57.3	-60.3		93.6	508.3			1.000021
026.00.0	56.7	-60.2		92.6	508.5			1.000021
027.00.0	56.2	-60.1		91.6	508.7			1.000020
028.00.0	55.6	-59.9		90.6	508.9			1.000020
029.00.0	55.1	-59.7		89.6	509.1			1.000020
030.00.0	54.6	-59.6		88.6	509.3			1.000020
031.00.0	54.0	-59.4		87.6	509.5			1.000020
032.00.0	53.5	-59.3		86.6	509.7			1.000019
033.00.0	53.0	-59.1		85.6	509.9			1.000019
034.00.0	52.5	-59.0		84.6	510.2			1.000019
035.00.0	52.0	-58.8		83.6	510.4			1.000019
036.00.0	51.5	-58.7		82.6	510.6			1.000018
037.00.0	51.0	-58.5		81.6	510.8			1.000018
038.00.0	50.5	-58.3		80.6	511.0			1.000018
039.00.0	50.0	-58.2		79.6	511.2			1.000018
040.00.0	49.5	-58.0		78.6	511.4			1.000018

GEODETIC COORDINATES  
33.16712 LAT DEG  
106.49511 LON DEG

UPPER AIR DATA  
3120030145  
JALLEN

STATION ALTITUDE 4051.00 FEET MSL  
8 JUL 79 0800 HRS MSL  
ASCL. STATION NO. 145

TABLE 6 (cont)

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL. HUM. PERCENT	DENSITY GM/CM <sup>3</sup> METER	SPEED OF SOUND METERS PER SECOND	WIND DATA DIRECTION DEGREES (T)	SPEED KNOTS	INDEX OF REFRACTION
000.00.0	49.0	-50.1		79.5	571.2			1.000018
00200.0	46.0	-50.1		76.7	571.3			1.000018
00400.0	43.1	-50.1		77.9	571.3			1.000017
00600.0	47.6	-50.1		77.2	571.4			1.000017
00800.0	47.2	-50.0		76.4	571.4			1.000017
00900.0	40.7	-50.0		75.7	571.4			1.000017

STATION ALTITUDE 4051.00 FEET MSL  
 C 100V. 79  
 ASCL. 510. NO. 145

LABORATORY LEVELS  
 3120030145  
 CALLEN

GEODETIC COORDINATES  
 33.10712 LAT DEG  
 106.49511 LONG DEG

TABLE 7

PRESSURE EQUIPOTENTIAL		TEMPERATURE		REL. HUM. PERCENT	WIND DATA	
MILLIBARS	FEET	AIR DEGREES CENTIGRADE	DEW POINT CENTIGRADE		DIRECT N DEGREES (N)	SPEED KNOTS
850.0	4059.	11.2	6.5	73.	221.5	0.5
800.0	6359.	9.1	3.0	69.	230.4	23.8
750.0	6164.	5.5	1.1	73.	248.7	33.3
700.0	5984.	.7	-2.2	81.	250.0	30.7
650.0	11860.	-3.2	-6.5	70.	253.7	40.5
600.0	13051.	-6.6	-6.7	69.	243.5	42.0
550.0	10155.	-12.7	-21.2	49.	242.2	50.1
500.0	10529.	-16.8	-20.0	72.	251.8	50.4
450.0	21106.	-20.9	-25.1	69.	253.0	71.8
400.0	23339.	-25.3	-43.1	17.	254.8	64.1
350.0	27033.	-31.5	-49.0	10.	260.5	112.4
300.0	30612.	-39.1			267.3	139.6
250.0	34629.	-47.5				
200.0	39351.	-50.4				
175.0	42878.	-62.9				
150.0	45163.	-66.2				
125.0	46792.	-67.2				
100.0	53291.	-65.2				
80.0	57771.	-60.1				
70.0	60483.	-63.5				
60.0	63006.	-61.1				
50.0	67347.	-56.2				